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INTERIM TECHNICAL INSTRUCTIONS  
FOR THE CONDUCT OF INFILTROMETER INVESTIGATIONS

August 23, 1940

U. S. Department of Agriculture

INTRODUCTORY STATEMENT

The following infiltrometer equipment was recently shipped to Flood Control Survey Parties in compliance with instructions of the Administrative Sub-Committee:

(1) Twenty-four Type FA artificial rainfall applicators to replace North Fork applicators already in the hands of survey parties. Pumps and some improved parts for the North Fork equipment were shipped with the new applicators.

(2) Eighteen complete infiltrometers, each consisting of a Type FA applicator, a pump, and North Fork plot and wind protection equipment. These were shipped in pairs to nine surveys not previously supplied with infiltrometer equipment.

(3) Ten sets of Type F artificial rainfall apparatus for use on 6' x 12' plots, complete with pump, plot equipment, and wind protection canvas. These were sent singly to those surveys on which it was felt that they were most needed. (Three additional Type F outfits were also constructed at Fort Worth, Texas, for distribution to southwestern Flood Control Surveys.)

Each of the parties to which equipment was sent has been notified of the shipment by bureau letter. The official assignment of infiltrometer equipment for the present season will be made in the near future by the Administrative Sub-Committee. Instructions for the establishment of infiltrometer parties will also be issued by the Administrative Sub-Committee.

A manual of standard procedure for the use of infiltrometer equipment is now being prepared by the Hydrologic Sub-Committee for early distribution to all survey parties. Until this manual becomes available, the Hydrologic Sub-Committee recommends that all field infiltrometer work be governed by the general instructions given herein. It is believed that the training received by survey infiltrometer operators at the Asheville conference, in conjunction with these instructions, will enable field parties to initiate infiltrometer investigations immediately.

The foregoing statement conveys no authority to initiate work that is not part of an administratively approved survey. Its only purpose is to provide background for the following instructions, which are of a strictly technical nature.



GENERAL INSTRUCTIONS FOR CONDUCTING INFILTROMETER INVESTIGATIONS

(1) The objective of flood control infiltrometer investigations shall be to obtain part of the information needed for evaluating the effect of proposed land use improvement programs on flood run-off. This requires the determination of the infiltration characteristics of complexes of soil, plant cover, and cultural treatment. The practice of removing plants and litter from the plots will, therefore, be abandoned.

(2) Hereafter infiltrometer investigations shall be made with pairs of Type FA infiltrometers (12" x 30" plots) and with single units of the Type F apparatus (6' x 12' plots).

(3) On surveys where only a limited amount of field work can be completed during the present season, first priority shall be given to obtaining conclusive data on a few of the more important complexes; particular attention being given to those for which the maximum and minimum infiltration capacities are likely to be found.

(4) On surveys to which Type F apparatus is assigned, tests with this device shall be made at a few centrally located points in each of the more important complexes. (The complexes selected would probably be identical with those chosen under (3)).

(5) On watersheds where Type F tests are made, the Type FA infiltrometers shall be used to investigate complexes for which Type F data are not obtained, and to secure data on variations of the complexes studied with the Type F apparatus. For the purpose of comparison, Type FA tests should be made at the same sites as Type F tests and preferably at the same time.

(6) On watersheds where infiltrometer investigations have been started with the North Fork infiltrometer, every effort shall be made to utilize the North Fork data already obtained. To make this possible, it will be necessary to establish correlations by which the previously collected North Fork results may be converted into the infiltration rates that would have been obtained with the Type FA infiltrometer. It may be possible to do this by making tests with both infiltrometers on a few sites representative of the major land classes of the watershed.

(7) Tests made with the North Fork infiltrometer on plots strictly comparable to those on which either Type FA or Type F runs are made, or similar comparisons of Type FA and Type F equipment, will yield data of value to many survey parties. For this reason, such comparative data shall be transmitted, through the channels of the chairmanship bureau, to the office of the Technical Adviser on Hydrology, where it will be summarized for immediate distribution to all field parties. Such information will greatly reduce the number of comparative tests that the individual parties will be required to make. The material sent to Washington should include reproductions of the hydrographs regularly plotted in the field, a summary of results and brief descriptions of the plots and their condition. Copies



of the original field notes will not be required. Until further notice, all available comparative data shall be sent at the end of each month.

(8) The operating procedures developed by the survey party members attending the Asheville conference shall be employed in all infiltrometer investigations until further instructions are issued.

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The Hydrologic Sub-Committee will be very glad to receive technical questions and suggestions from field parties. These should be submitted through channels of the chairman agency.

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Those instructions are approved by the Officer In Charge, Flood Control, and are to be given effect by Flood Control personnel.

